

This listing of claims will replace all prior versions, and listings, of claims in the application.

**Listing of Claims:**

1-26) (Canceled)

- 27) (Currently amended) A method for analysis of a solid material, comprising:
- (a) coring the solid material with a coring tool such that a plug is formed;
  - (b) extruding the plug of solid material;
  - (c) exposing the plug of solid material to radiation;
  - (d) detecting scattered radiation; and
  - (e) analyzing the scattered radiation to obtain information about the crystalline structure of said solid material using powder X-ray diffraction or Raman spectroscopy, wherein when the radiation is X-ray radiation, the angle of incidence of the X-ray radiation is less than 2.50 degrees.
- 28) (Previously presented) The method for analysis of a solid material of claim 27, further comprising compressing said solid material after said plug is formed.
- 29) (Previously presented) The method for analysis of a solid material of claim 27, further comprising loading said coring tool onto a rack after said solid material is extruded.
- 30) (Previously presented) The method for analysis of a solid material of claim 29, wherein said rack comprises a top plate with one or more holes.
- 31) (Previously presented) The method for analysis of a solid material of claim 30, wherein said top plate is composed of a material that absorbs x-ray radiation.
- 32) (Previously presented) The method for analysis of a solid material of claim 27, wherein a pin is used to extrude said plug of solid material.

- 33) (Previously presented) The method for analysis of a solid material of claim 32, wherein a micrometer is used to adjust the position of said pin.
- 34) (Previously presented) The method for analysis of a solid material of claim 29, wherein said rack further comprises a lifting plate.
- 35) (Previously presented) The method for analysis of a solid material of claim 27, wherein said radiation is x-ray radiation.
- 36) (Previously presented) The method for analysis of a solid material of claim 27, wherein said radiation is infrared radiation.
- 37) (Canceled).
- 38) (Currently amended) A method for the analysis of a plurality of solid samples, comprising:
- (a) coring each solid sample with a coring tool such that each solid sample forms a plug;
  - (b) extruding each plug of solid material;
  - (c) exposing each plug of solid material to radiation;
  - (d) detecting scattered radiation; and
  - (e) analyzing the scattered radiation to obtain information about the crystalline structure of each plug of solid material using powder X-ray diffraction or Raman spectroscopy, wherein when the radiation is X-ray radiation, the angle of incidence of the X-ray radiation is less than 2.50 degrees.
- 39) (Withdrawn) A system for analyzing a solid material, comprising:
- (a) a coring tool comprising a means for extruding a plug of solid material;
  - (b) a means for exposing the plug of solid material to radiation; and

- (c) a means for detecting scattered radiation.
- 40) (Withdrawn) The system for analyzing a solid material of claim 39, further comprising a means for compressing said solid material.
- 41) (Withdrawn) The system for analyzing a solid material of claim 39, further comprising a rack, wherein said rack comprises a top plate with one or more holes.
- 42) (Withdrawn) The system for analyzing a solid material of claim 41, wherein said top plate is composed of a material that absorbs x-ray radiation.
- 43) (Withdrawn) The system for analyzing a solid material of claim 39, wherein a plurality of solid materials is analyzed.
- 44) (New) The method of claim 38 wherein the individual samples are arranged in a nominal X-Y grid, such that the minimum Y hole spacing  $S_y$  is described by the equation:

$$S_y = W_a / (n_d * n_y - 1)$$

wherein  $n_d$  represents the number of holes per diagonal in a column,  $n_y$  represents the number of holes per row, and  $W_a$  represents that array width, and the minimum distance between holes,  $s$ , is described by the equation:

$$s = (S_x^2 + S_y^2)^{1/2}$$

wherein  $S_x$  represents the spacing between the X-holes.